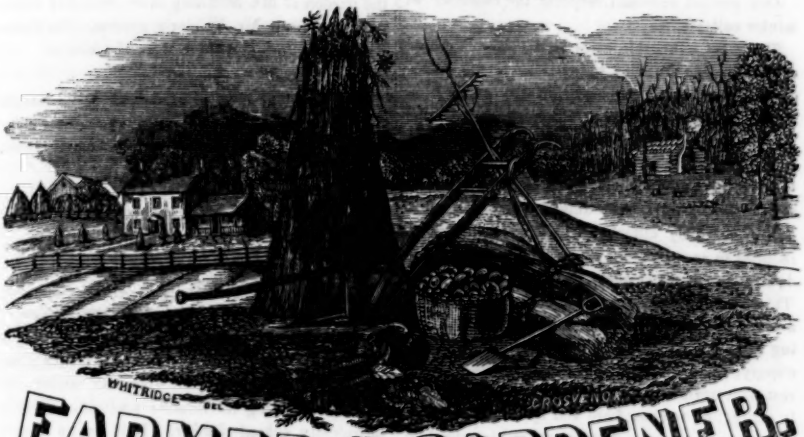
WESTERN



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WESTERN FARMER AND GARDENER.

INDIANAPOLIS, THURSDAY, NOVEMBER 15, 1846.

PARLOR PLANTS IN WINTER.

There are so few who care enough for flowers to trouble themselves with them during the winter, that it seems almost unkind to criticise the imperfections of those who do. But it is very plain that, for the most part, skill and knowledge do not keep pace with good taste. *Not* to point out defects to those who are anxious to improve would be the real unkindness.

There are two objects for which plants are kept over.

Plants are housed for the sake of their verdure and bloom during the winter; or, simply to protect them from the frosts. Our first criticism is, that these two separate objects are, to a great extent, improperly united. Tables and window-stands are crowded with plants which ought to be in the cellar or in a pit. Plants which have bloomed through the summer *will* rest during the winter. To remove them from the heat and dust of the parlor — to place them in a dry, light, warm cellar, will certainly conduce to their entire rest, and the parlor will lose no grace by the removal of ragged stems, falling leaves, and flowerless branches. When a large quantity of plants are o be protected, and cellar room is wanting, a pit may be prepared with little expense. Dig a place eight or ten feet square, in a dry exposure. The depth may be from five to six feet. Let the surface of this chamber be curbed about with a plank frame, the top of which should slope to the south at an inclination of about three inches to the foot. This may be covered with plank except in the middle, where two sash may be placed. The outside of the plank may be banked up with earth, and if light brush or haulm be placed upon the top, in severe weather, it will be all the better. The inside may be provided with shelves on every side for the pots, and thus hundreds of plants may be effectually protected. During severe freezing weather the sash should be covered with mats, old carpet, straw or anything of the kind; and in *very* cold weather this should not be removed during the day time: for if the plants have been touched with frost the admission of light will destroy or maim them, whereas, if kept in darkness, they will suffer little or no injury. Several families may unite in the expense of forming a cold-pit and thus fill it with plants at a small expense and very little inconvenience to each. *Very little* if any water should be given to plants thus at rest.

Even where plants are wanted to bloom in the parlor late in the winter, it is often better to let them spend the forepart of the winter in the cellar or pit.

Our second criticism respects the *character* of winter collections.

The most noticeable error is the strange crowd of plants often huddled together as if the excellence of a collection consisted in the number of things brought together. Everything that the florist sees in other collections has been procured as if it would be an unpardonable negligence not to have what others have. Hence we sometimes see scores of plants, very different in their habits, requiring widely different conditions of growth, reduced to one regimen, viz: a place near the window, so much water aday, and one turning round. This summary procedure, of course, soon results in a vegetable Fallstaff's regiment;—some plants being long, sprawling, gangling, some dormant and dumpy; some shedding their leaves and going to rest with unripe wood, some mildewed, a few faintly struggling to show here and there a bewildered blossom. In such a collection the eye is pained by the entire want of sympathy arising from jumbling together the most dissimilar kinds; from the want of robust health, and from the entire disappearance of that vivid freshness and sprightliness of growth, compact while it is rapid, which gives a charm to well managed plants.

All plants which are not growing, or for whose growth your parlors are not suitable, should be put into the cellar and should there be allowed to stand over in a state of rest. According to your accommodations select a *few* vigorous, symetrical, hearty, healthy plants for the window. *One plant* well tended, will afford you more pleasure than twenty, half-nurtured.

In our dwellings, one has to make his way between two extremes in the best manner that he can. Without a stove our thin-walled houses are cold as an ice-house, and a frosty night sends sad dismay among our favorites. Then, on the other hand, if we have a stove, the air is apt to be parched, and unwholesome, fit for salamanders, fat and torpid cats and dozing grandmothers. There is not much choice between an ice-house and an oven. *There can be no such thing as floral health without fresh air and enough of it.* This must be procured by frequent ventilation.

There has recently been completed a splendid green-house by the London Horticultural Society, which occupies one acre of ground. The frame work is of iron, and the entire structure is estimated to have cost one hundred thousand dollars.

At the exhibition of Massachusetts Horticultural Society, which took place last month, the show of Pears is said to have been very extensive. From the garden of Mr. Manning there were 177 varieties; and from Mr. Wilder's garden, (the President of the Society,) there were 154 kinds.

Apples. The crop of apples, says the Boston Cultivator, on the sea-coast throughout New England, is light. The Roxbury russetts are almost a total failure.

SUBSOIL PLOWING AND IRRIGATION.

We promised to continue from Colman's European Agriculture an account of the notable improvements in Great Britain in working the soil.

Subsoil Plowing. — There are two modes of stirring the subsoil; the one breaks and brings the earth up to the surface, and is called *trench-plowing*; the other simply pulverizes the under soil without changing its relative position. This is technically *subsoil-plowing*. It is by no means true that very deep plowing is proper for all soils under all circumstances. The best English practice requires thorough-draining to precede subsoiling. On all soils this is the best mode; on all tenacious soils it is indispensable; but on soils which are light and porous, so that the superfluous water will sink through them, subsoil plowing will be very profitable, though not so much so as if the land is first drained.

It is the impression of most readers that *draining* is employed *only* on wet, springy lands. This is quite an error. The English farmer regards *no soil* as exempt from the remarkable benefits of draining. After giving instances in which subsoil plowing had failed of any benefit, Mr. Colman adds:

"The quality of the land in all these cases is the same, and consists of a level, uniform tract, of a peculiarly tenacious soil, called the lias clay, containing, by analysis, more than forty-three per cent. of alumina, or pure clay. Mr. Black remarks, that 'the soil which will receive the most permanent improvement from subsoil-plowing, is one in which silica predominates; indeed, all shallow soils of the lighter kinds will be improved by it, and particularly so if there is any moorland pan, or indurated incrustations, formed by the weight of the plow going for a number of years at the same depth, or from other causes. If the subsoil is of good quality, and a greater depth of furrow is wished for, the subsoil-plow may be used with great advantage; the percolation of water prepares the subsoil for amalgamation with the surface. Strong clayey land cannot be permanently improved by subsoil-plowing.'"

There seems good reason to suppose that a riper experience will ultimately disclose special methods of dealing with every variety of soil, so that by modifications suitable to each, there will not be *any* soil which may not be improved by draining and subsoiling. Mr. Colman often seems to doubt the beneficial effects of scientific discoveries, or of

certain processes But it seems to us that his doubts do not spring from sagacity, but from timidity. It is not because there is an apparent or latent incompatibility of any course with principles or experience, but simply because he is afraid to believe anything which has not been actually done, no matter how marked the analogy, how plain the diagnosis. In respect to treating tenacious soils by subsoiling, Mr. Colman says:

"It may, however, be considered as to a degree settled, that the very strong and adhesive clays in the application of this system of thorough-draining and subsoiling are to be looked at with a good deal of distrust; yet the certain success which has attended many attempts to drain a strong soil, by very deep and frequent draining, and by giving a fair opportunity, after the drains were opened, for the operation of excessive heat or excessive cold, in loosening and rending the soil, scarcely permits us to despair of some improvement in almost any case."

The full triumphs of subsoiling are to be seen upon light, porous, silicious soils. We will extract an interesting statement of Mr. Denison of Kilnwick Percy, Yorkshire, published in the transactions of that county agricultural society, for 1840:

"Few have been hitherto met with who would not ridicule the idea of applying the operation of subsoil-plowing and thorough-draining to light, blow-away sand; and as it is to this latter description of land that I have chiefly turned my attention and experiments, I will confine myself to what I really know and have experienced.

"I will now mention the mode in which I have brought a considerable tract of sandy land into cultivation; and I feel so thoroughly grateful to the subsoil-plow for the share it has had in my success, that I cannot do sufficient justice to it without fully explaining the system upon which I worked.

"The tract of land upon which I began was in extent about 400 akers, the principal part of which was rabbit warren. The general character of this tract was, that although, upon the whole, it was nearly a level, yet the surface was undulating; the sandy swells being covered with heather, and the hollows, a bed of aquatic plants, being for many months in winter entirely covered with water. Of the sandy hills, the soil, as far as I am able to judge, was a sterile, impalpable sand, having been heretofore cultivated, and again abandoned. About six or eight inches below the surface, this sandy soil seemed to become hardened into almost a sandstone, with the occurrence occasionally of an impervious bed of ironstone; presenting, wherever it did occur, a complete obstacle to the entrance of the plowshare: generally speaking, however, these nodules, or beds of ironstone, lay at a depth somewhat below the ordinary plowings. The marshy hollows are of a totally different nature; and their cultivation had never been attempted; an idea apparently having prevailed, that they were below the reach of drainage. When become dry, the soil of these hollows appeared to be a black vegetable mold, extending to a considerable depth; in some places peaty, in all containing a large proportion of inert vegetable matter.

"Upon considering the character of this tract of land, I thought that the principle of subsoiling would be equally applicable to the light, sandy hillocks and the marshy levels. Upon the higher grounds, it was obvious that, when under cultivation, the sun had very great power over the six or eight inches of stirred soil, and that thus vegetation was either burnt up or, if a strong ground-wind came, there was danger of the contents of one field being blown into another. If, therefore, by stirring to the depth of sixteen instead of six inches, a greater volume of soil could be obtained, the power of retaining moisture would be proportionally increased, although the constituent parts of the surface remained unaltered; for I never contemplated that which by some is confounded with, and by others preferred to, subsoiling; I mean trench-plowing. I am of opinion that in very few cases, if any, is the soil underneath more fitted for vegetation than that of the surface; least of all in a case like the present: a hungry, ferruginous subsoil could be no amendment upon a surface however sterile. Experience has shown that this theory is correct, and that, on sandy soils, the advantage to be derived from subsoiling is from obtaining a greater depth, and consequently a greater power to absorb moisture. On the level, marshy portions of this tract, the benefits, though not so obvious in theory, have proved equally clear in practice. The subsoil-plow has broken through the mass of tough vegetable matter, tearing up the roots of rushes and other fen weeds, which were beyond the reach of the common plow.

"My first operation was to carry a main drain through the whole estate; and this was not only an expensive job, but one also which required considerable precision; for upon the accuracy of its level depended the success of the whole drainage. Nor, when the drain was made, and the surface water conveyed away, was half the requisite treatment effected; for it proved that the sandy elevations, of which I have so often spoken, were the receptacles of springs, so that, in the whole of the estate I purchased, though termed a sandy waste, there was hardly a single acre which did not require draining previous to subsoiling.

"The main open drain being carried through, the next thing was to make main hollow drains, leading into it, bottomed with tiles, of the width and height of six inches, and covered with a sod, four inches thick, taken from the nearest hedge side. I prefer sod to sticks, ling, or straw, for it allows the water to percolate freely, and does not shrink. The depth of these leading tiled drains varies much, according to the undulations of the surface. In some cases, it was necessary to cut them between six and seven feet deep,—altogether at an average of four feet. Into these drains were brought the smaller ones, laid with tiles of the width and height of three and a half inches, placed at every twelve yards apart, and of the same average depth as the others. I consider it prudent to have in every five acres one leading drain, with an outlet into the main open one: the mouths of the outlets should be of wood kyanized, with a swing-door for the sake of preventing the possibility of the outlet being trodden up, or destroyed by frost acting upon the tiles.

"The above particulars have been given somewhat at length, from the conviction of the great importance of effectual drainage, and that, without it, subsoil-plowing will do more harm than good.

"The first process, after the drains were complete, was in the months of March and April, to pare and burn, and to sow rape and turneps, drilled with half-inch bones and soot in the following month. The crop was not at all regular, being good where the soil was deep and black, but very bad where it was sandy; the sole being hard, and the action of the sun having great power to the very roots of the plants.

"In the winter of the same year, after the turneps and rape were consumed, I plowed the land in the direction of the old furrows; and *the subsoil-plow followed*, worked by two oxen and four horses, loosening the hard, sandy sole on the higher ground, and tearing up the roots of the rushes, &c., on the low. In this state the land lay till the month of April following, when Finlayson's drag-harrow was applied

across the plowings, which brought up all the rubbish and roots to the surface; these were then raked off and burnt. I then sowed the black Tartarian oats, and plowed them in: the ground was then harrowed and pressed down with a clod-crushing roller, made by Mr. Croskill, of Beverly, which implement has been of the greatest service to me in almost every stage and crop. It has been the means of consolidating the earth; which would otherwise have been too light, and it has kept the moisture in also. It has a decided advantage over every other kind of roller in this respect, because it leaves an uneven surface instead of a flat one, from which the rain, in sandy land especially, is apt to run off without nourishing or refreshing the crop.

"The oats came out very healthy, and had no check: in sixteen weeks from the time of sowing, they were reaped, and, when threshed, yielded ten and a half quarters per aker, eight bushels per quarter, which were sold at 26 s. per quarter, — and this from land that was let two years before at 2 s. 6 d. per aker.

"I sowed forty akers with oats, of the same flat of land that had been pared and burnt, but not subsoil-plowed, from want of time. The produce of this was not more than three quarters per aker, and straw small and short—a very fair proof of the advantages of subsoiling.

"I have now 100 akers of wheat and oats growing on what was the very worst part of the whole property, and considered perfectly useless. It has been drained, pared, and burnt, and subsoiled exactly after the mode above detailed; and it looks as promising as what was so good last year. The land upon which I had potatoes, exhibits as decided a superiority."

The benefits of subsoiling are no longer questionable. In Great Britain, to deny the advantage of this mode of dealing with the soil would be as extravagant as to deny the benefits of plowing at all. In confirmation of this statement we add two facts which are decisive of this matter:

"I can only say, that, in England, with scarcely an exception, as far as I have seen, the improvement is sure to be remunerative in a very high degree; and for that reason the government are proposing a most beneficial measure in offering the loan of capital, upon adequate security, for the accomplishment of such improvements, and in other cases allowing the owners of entailed estates to raise a certain amount upon the mortgage of such estates for the same purpose."

IRRIGATION:—While no expense or skill are spared to free the soil from stagnant water, and from superabundant water, on the other hand, several of the noblest estates of England have been vastly improved by skillfully *supplying* water to the soil. Leibig gives the reason why irrigation is so beneficial:

"It is because the water of rivers and streams contains oxygen in solution, that it effects the most complete and rapid putrefaction of the excrements contained in the soil, which it penetrates, and in which it is continually renewed. If it was the water alone, which produced this effect, marshy meadows should be most fertile. Hence it is not sufficient, in irrigating meadows, to convert them into marshes, by covering, for several months, their surface with water, which is not renewed; for the advantage of irrigation consists principally in supplying oxygen to the roots of plants. The quantity of water necessary for this purpose is very small, so that it is sufficient to cover the meadow with a very thin layer, if this be frequently renewed."*

Flooding is not irrigating. Benefits are to be expected only by frequently admitting small quantities of water to the surface, under such circumstances that it will either sink or soon flow off:

"It is settled that simple water, without any admixture, is in itself a great enricher of the soil, or perhaps, more properly, a great promoter of vegetation. If the water of irrigation is charged with enriching matters in a state of solution, its beneficial effects are of course increased. Waters charged with mineral substances, such as water strongly impregnated with iron from peat-bogs, or water from copper mines, is pernicious to vegetation, as any one may see, who will visit the outlets of the copper-mines of Cornwall. It is established, likewise, that water in irrigation, in order to produce its best effects, must not be suffered to stagnate upon the land, but must pass in a steady progress over it; and that this progress should be comparatively gentle, and not sudden and rapid. It is equally well established, that lands which it is proposed to irrigate, should be thoroughly drained, so that the water poured upon the land should not be suffered to stand in the land, nor upon it. The effect of stagnant water upon the surface, or the complete saturation of the soil, is to change the nature of the herbage, and to produce those grasses, which are coarse or innutritious, in place of the finer, sweeter, and more healthful. Yet it is not the mere transition of the water over the surface that is to be sought. It is desirable to have it soak into the ground, but not to remain there. Its speedy transition over the surface is to be effected by the inclination of the land from where it is received to the trench, furrow, or ditch, by which it is to be carried off. Its passing into the ground, and finding a speedy passage off, is to be effected by a system of thorough draining and subsoiling; for if the subsoil is impervious, the irrigated field becomes converted into a marsh. One of the most eminent farmers in Scotland, Mr. Oliver, of Lochend, near Edinburgh, who had a large extent of meadow, irrigated by the sewerage water from the city, found that, after his fields were thorough drained, the benefit of the irrigation was greatly increased; for by the descent of the sewerage water into the soil, as well as over it, the enriching portions of the manure in a state of solution were carried to the roots of the plants. In the irrigated meadows of the Duke of Portland,—for its extent one of the most beautiful and finished agricultural improvements which can be found, and which I shall presently fully describe,—he showed me, that portions of his irrigated lands, which had even been drained, continued to affect his sheep with the rot; and this evil was not remedied until the draining was carried to the depth of eight feet or more. Before that, without doubt, the stagnant water at the bottom prevented the water of irrigation from passing off, and may be said to have poisoned the whole ground.

"In irrigation skilfully managed, the increase of product is often very great—twofold, fourfold, in many cases even fivefold. Even sands, which were barren, have, by irrigation, been made productive. Plants, in such cases, having once found a footing, by the spread and decay of their own roots, having at length formed a soil, and created around themselves the elements of fertility. The effect of pure water, I have already said, is considerable; but when this water brings with it the refuse of the streets and habitations of a town, in a state of solution, the effects, as we shall presently see, are most remarkable. I have seen it stated, that water issuing from a lime-

* Leibig's Agricultural Chemistry, p. 168.

stone soil, and strongly impregnated with lime in the form of a sulphate or other combination, has been employed with great success in irrigation. Such instances have not come under my observation; but I cannot doubt the effect, where the soil was of a nature to require that element. In respect to manures, or any of the constituents of plants, it is evident they can be taken up only in a state of the finest solution. Here homœopathy triumphs, and no human sense is acute enough to discern, no human scales are fine enough to measure, those infinitesimal atoms out of which the rough substance of the gnarled oak is formed."

We will select one or two of the most remarkable instances of irrigation:

"The next great improvement in irrigation, which I had the pleasure of witnessing, was at the highly and most judiciously improved estate of Lord Hatherton, at Teddesley Park, in Staffordshire.

"Here he has undertaken, under the superintendence of a most competent manager and steward, to drain completely between five and six hundred akers of land, and has managed to convert the water of drainage into a valuable mill-power; and then leads it off for the purpose of irrigating about eighty-nine akers of land, taking in its way much of the drainage of the barnyard, (where a stock of about two hundred head of cattle are constantly soiled,) which is collected in a large reservoir for this purpose, and sometimes carried out in a cart for the purpose of irrigation, and sometimes pumped upon a mixed heap of materials composted for manure, that it may enrich and decompose them. The water, in order to form the mill-power, is first collected into a small reservoir, half a mile distant from the farm buildings, and then conveyed in covered drains to the mill-house. In order to bring the water out at a proper level, it was necessary to sink a channel through a hard sandstone for a distance of about five hundred yards. 'The stream of water was not sufficiently powerful to turn an undershot wheel; and to enable it to act with force, it was necessary to bring it out to the upper part of a wheel of thirty feet in diameter. This wheel has been placed in the rock thirty-five feet deep, and the head-way [tail-way] has been carried from the bottom through the rock, which comes out in a valley below, at the distance above mentioned of five hundred yards.'

This mill power is applied to drive a threshing machine; to the cutting of hay and straw; to the crushing of oats and barley; to the grinding of malt, and to the turning of a circular saw; and it is obviously capable of further application. This is an immense advantage. The water, having performed this duty, is then conducted into the fields which are to be irrigated, where, by various channels, it is made to overflow and enrich these extensive grounds. The whole number of akers embraced in the farm is about thirteen hundred, only a portion of which was subjected to drainage; the number actually irrigated is eighty-nine. This land was originally of little comparative value, but is now highly productive. No manure is ever applied to these lands other than what is carried by the water in its mixture with the liquids from the barn-yard. The year before the last, notwithstanding the severe drought of the summer, they produced at least two tons of hay per aker. They are fed in the spring with sheep, and with cattle and sheep after being mowed. It would not be easy to estimate too highly the value of lands of such cheap and permanent productiveness, after they were once formed, as especially in reference to the means which they furnish of enriching other and less favored portions of the farm. The improvements on this farm are of a most substantial and complete character. The accomplishment of the object in view, in the most useful, thorough, and least expensive mode, is the governing principle pervading the whole establishment. Certainly one more judicious could not be adopted; and in this respect they present an example capable of being followed by farmers of limited means, whose improvements must be restricted to such only as will pay. The water obtained by drainage, in this case, happens to be favorable for irrigation. The whole expense of underdraining the land, of erecting water-wheel and machinery, and of irrigation, is estimated at £2733 2s. 2d., and the increased annual value of the estate is rated at £1013 2s. 4d. This results from draining 467 akers, and employing the drain water for mill purposes, and the irrigation of eighty-nine akers of land; 'affording a clear annual interest on the outlay of full thirty-seven per cent.'"

We next give an account of that prevailing in the vicinity of Edinburgh, Scotland:

"I come next to speak of a system of irrigation established in Edinburgh, which I looked at with a good deal of interest, where the sewerage water from the drains of the city are applied to grass lands in its neighborhood, which by this means are rendered most extraordinarily productive.

The drainage water from a large portion of the city of Edinburgh is collected into covered carriers and drains, and from these emptied into a small stream of water, very properly, as one may suppose in such case, called the *Foul Burn*, the term *burn* being the Scottish name for a small stream of brook. Here it passes along, in an open brook, among some flat lands, which, by proper arrangements, it is made to overflow. I should state that, before it reaches the places where it is thus diffused, it is received in tanks, where the more solid parts are deposited. It does not require any extraordinary acuteness of smell, on approaching these irrigated lands, to become satisfied that that the waters, even after passing from the cisterns or tanks, are sufficiently charged with odoriferous particles held in suspension. Indeed, in visiting some parts of the old town in Edinburgh, of Glasgow, and of Dundee, it is difficult to persuade one's self that the inhabitants of those parts are not absolutely deficient in one particular sense. Whether, with the present habits prevailing in those places, this deficiency is to be considered an evil or a good, I shall not undertake to decide.

"This water, thus received, is diffused over three hundred akers of land; and these lands are rendered productive to a most extraordinary degree. One of the principal proprietors, who held his land, under a long lease, at a rent of £5 per aker, and sub-let this irrigated land at £30 per aker, informed me that it was sometimes cut seven times in a season. The grass is carried into the city, a distance of two and three miles, for the support of the cows, which supply the city with milk. Different channels or gutters are formed for the admission of the water, so that the whole may be flooded. It is applied generally after every cutting, where the situation admits of it; but it is found advisable not to apply it immediately upon the grass being cut, nor before it has obtained some small growth.

"The offensive exhalations from meadows thus treated have been the subject of prosecutions at Law, as nuisances to health, by parties who derived no benefit from the operation, and whose sense of smell, therefore, was not, as I have known in some similar cases, benumbed or bribed by any pecuniary advantage. In the testimony adduced on these occasions, it has been stated that the rent for which some of these meadows are leased in small portions to cow-feeders, varies on an average from £20 to £30 per aker. Some of the richest meadows were let, in 1835, at £38 per aker; and in that season of scarce

forage, 1826, £57, or $285, per aker, were obtained for the same meadows.

"The waste land, called *Pigget Whins*, containing thirty akers, and ten akers of poor, sandy soil adjoining them, were formed into water-meadows, in 1821, at an expense of £1000. The pasture of the Figget Whins, containing thirty akers, used to be let for £40 per year, and that of the ten akers at £60. Now, the same ground, as meadows, lets for £15 or £20 an aker per year, and will probably let for more, as the land becomes more and more enriched;' that is, land which, before the irrigation let for about $500 per year, now, under this improvement, yields an annual rent of from $3000 to $4000. The irrigation is continued at different times, from the first of April till the middle of September.

"The parties interested in defending the use of this water for irrigating these lands maintain that the grass produced in the meadows by this process supports in Edinburgh 3000 cows, and in Leith 600 cows. It is added, 'that the parties interested in the lands estimate the compensation which would induce them to discontinue the practice, a, at £150,000, or $750,000. This is stated as the sum which the proprietors at the west side of the city would be entitled to, exclusive of those at the east, were the practice abolished by government.'

"These are certainly most extraordinary results. The estimate of their pecuniary value may be exaggerated; and yet this would be difficult."

Another mode of irrigation is detailed which is entirely possible to hundreds of farmers and gardeners in the West; we take the liberty of condensing the account:

"The next example of irrigation, to which I shall refer, is of a different kind from those of which I have spoken, but it may properly be classed under the same head; and its character is so extraordinary, and its practical bearings so important, that I am anxious to present it to my readers. Having repeatedly visited the farm, and being personally acquainted with the enterprising proprietor, I am prepared to affirm the statements, however remarkable, which I shall present."

"His engagements oblige Mr. Dickinson to keep always on hand a large number of horses. Among other things, an ingenious provision is made for the saving of the urine of the animals, and, as far as possible, for preventing the escape of the ammonia, which high authorities deem its most valuable ingredient, in its transition from the stall to the tank in which it is finally collected from the various stables. To effect this, the floors of the stalls are laid either in brick, or stone, or a composition of the hardness of stone, with a gentle inclination of the floor from each side to the centre of the stall. Here an iron pipe is sunk, the whole length of the stall, similar to half a gun-barrel, with its concave side up, of course, into which the urine finds its way; and this is covered the whole way with a thin strap of iron, which can easily be lifted when the conduit needs cleaning. The urine goes into this channel unmixed with straw, and is conveyed by this pipe into a larger whole pipe in the rear of the stable, and is thence carried to the tank, which is placed in the outer yard. This tank is very securely covered, and is emptied into a watering-cart by a pump, whenever occasion requires. Mr. Dickenson conceives there is great advantage in the liquid being thus, as far as possible, secured from the evaporation of its most valuable gasses. The number of horses kept here is, I believe, from 150 to 200. The liquid manure is, as far as possible, all saved for the use of his own farm. The solid parts of his manure are sold to farmers. This fact deserves particular notice. It is a point of the highest consideration. The stale of a horse is equal to about three gallons per day. If it were all saved, it would amount to about three and one-half gallons.

"Mr. Dickinson has a farm about five miles from his home in London, to which all his liquid manure is carried, and there distributed upon his growing crops, from such a cart as is usually employed for watering the streets of cities. When taken out there, it is mixed, before application, in the proportion of one part of urine to two of water; and the proportion to an aker is estimated at 1100 gallons of urine to 2200 of water; and this is applied as often as and soon after the grass is cut."

"The soil of Mr. Dickenson is a stiff clay, with which he mixes the rubbish gathered from the removal of old buildings in London, and consisting of sand and lime. In 1844, he mowed his rye grass ten times—

First in March, with about ten inches of grass;
April 13, a second time;
May 4, a third time
May 26, a fourth time;
June 14, a fifth time;
July 22, a sixth time; with ripe seed and three loads of hay straw to the aker.

"Immediately after each of these crops, the land was watered once from a London street water-cart, with one part of pure urine from the stables and two parts of water, the produce of each crop increasing with the temperature of the atmosphere from three quarters of a load per aker as hay to three loads per aker. The crop having shed a quantity of seed, he was doubtful the urine might injure its growing; so discontinued to water, but well harrowed it with iron harrows, and left it, expecting nothing more from it. It produced, however, three or four light crops afterwards:"

"Mr. Dickenson says that, when he has wished to relieve the tanks in the winter season, he has put on pure urine with excellent effect. He has also put on two parts urine and one water, and one part urine and one water, and two parts water and one urine. He is disposed to think, if there is such a quantity of urine as to render it indifferent how much is used, it may be applied pure to that description of grass, on almost all occasions, with success; but the effect would be greater on the land and plant in proportion to the temperature of the atmosphere. He advises to dilute more as the temperature rises, and for ordinary grasses to the extent of five or six parts of water. For the clover he thinks it ineffectual."

We conclude by extracting Mr. Colman's appropriate remarks upon the value of this process:

"Neither in Boston, New York, Philadelphia, nor indeed in any other city in the United States, have I known any systematic attempt to save the sewerage water for agricultural purposes; and yet I believe, at a very small expense a vast amount of the urine might be collected and carried out of the city by the neighboring farmers, without offence to any body, and with very great public and private advantage. I believe that, in many cases, it might, with a little pains, be collected from private and public houses, from stables, and from public urinals established in different parts of the city, which are very much wanted in the great thoroughfares, on grounds of health and comfort as well as decency; and that the farmers who are now in the habit of buying solid manure, at the stables of the city, at very heavy prices, would find even a much greater advantage in removing the liquid manure, after proper arrangements for its collection and removal should have been made. A very high authority states that 'human urine is particularly rich in nitrogen; and that it has been ascertained by analysis in this respect that one hundred

parts of the urine of a healthy man are equal to thirteen hundred parts of the fresh dung of a cow.'

"'The urine of men and of carniverous animals contains a large quantity of nitrogen, partly in the form of phosphates, partly as urea. Urea is converted, during putrefaction, into carbonate of ammonia; that is to say, it takes the form of the very salt which occurs in rain-water. Human urine is the most powerful manure for all vegetables containing nitrogen; that of horses and horned cattle contains less of this element, but infinitely more than the solid excrements of these animals.'"*

"Where any portion of the sewerage of a city can be saved without offence and without danger to health, the results at Edinburgh, evincing the value of such savings, show to how much consideration the matter is entitled. The agricultural value of one portion of this saving is estimated in Edinburgh at £150,000 sterling, which would be equal to a sum yielding an interest of $45,000 per year. This, we are to understand, is already obtained with very imperfect arrangements. After making a deduction of all the miscellaneous matters which go to swell the heap, 'it is calculated that, in a city containing 100,000 inhabitants, there is produced of human manure 24,440 tons a year, sufficient, according to Liebig, to manure 50,000 akers of land, and, if conveyed to the soil by irrigation, worth at least £12,000 a year, [or $60,000,] and probably much more.' If even one half of this could be so saved and applied it is obvious how much would be gained.

"The subject is now, in England, occupying, to an intense degree, the minds of many of the most distinguished men—politicians, magistrates, agriculturists, and philanthropists—in the kingdom. A company has been formed, with a capital of one million pounds sterling, and by men who are entirely obove any plan of mere speculation, for the purpose of supplying towns with water, and availing of the drainage of large towns for agricultural purposes. Some of the first engineers in the kingdom are actively engaged in their service. One of them, Mr. James Smith, of Deanston, the eminent agricultural improver, whose system of thorough-drainage and subsoiling may be said to constitute an era in agricultural improvement, has laid before the public a plan for conveying the sewerage of towns into the country for agricultural uses, by means of pipes, which is now being carried out in the city of Aberdeen, Scotland. His plan is, having collected the sewerage water of a town into a convenient receptacle, to force it, by means of a pump, to a sufficient altitude to send it into the country through large pipes, to be used for the purpose of irrigation of lands below the level where it is received, or of applying it to other lands by means of a pipe and hose.

I do not deem it necessary here to give all the elements of his calculation; but the result is that, in supplying an equal amount of the elements and requisites of vegetation, the cost of manuring one aker with

sewerage water, upon his plan, would be	£0	12s.	9d.
guano, 2¼ cwt. at 8 s. - - - -	1	0	0
farm-yard manure, 15 tons, at 4 s. - -	3	0	0

It is added that, 'by an experiment made last season on a portion of meadow in Lancashire, applying at the rate of 15 tons of farm-yard manure per aker, and 3 cwt. of guano to another equal portion, their effects were found to be inferior to the eight tons of sewerage water applied to a similar extent of ground. The amount of fertilizing matters contained in the water was not ascertained, but, assuming a similar quantity to that found in the Edinburgh sewer-water, the amount applied must have been about 1792 gallons per aker, which is less than the quantity which Mr. Smith proposes to apply to tillage land under his improved method of conveyance.

"The proposition at first is startling, and may awaken incredulity. I can only say that the plan is proposed and approved by men of as much engineering skill, and of as much practical experience, as are to be found in the world."

* Liebig, p. 97.

COMMUNICATIONS.

DO VARIETIES RUN OUT?

Dear Sir:—In your Magazine of the 1st September, you review a paragraph of an article entitled, "Do varieties of fruit run out?" In this you advance the idea that, "with the exception of their integuments, a bud and a seed are the same thing." Permit me, with due deference, to make a few remarks on the same. This, I think, will hold good just so far as vegetation is concerned, and, I apprehend, no farther. The legitimate office of a seed is to propagate and continue in existence the particular race of plants of which it is the product, and no original or new variety of a plant can be produced except from seed. This is not true of the bud (which is but the result of seed) when, by the ingenuity of man it is taken from its parent and transferred to a new stock; its location is only changed, its *functions* are not, but remain the same as if remaining in the parent. No new or uncertain development is expected or created by the change; but we look for the form of the leaf, color of the wood with its peculiar growth, size and appearance of the bloom, shape, size, color, &c. of the fruit, with its time of ripening, with as much confidence as if it had remained undisturbed in the plant from which it was taken, the new plant in which it is appointed to perform its functions being equally healthy. No other result can be effected under these circumstances by any ingenuity that man has yet developed or, I think, is likely to develop. It is, in fact, but an undeveloped branch of its parent, and in no respect differing from a graft, cutting, or layer. The result from either will be preciseiy the same. The practical part of the above is in accordance with the every-days experience of all horticulturists Does it not follow with equal force, that the constitution, whatever it be, is also carried with it? If that be diseased or has a tendency to it, the effect will follow with as much certainty as the operations of the physician when he infuses into the human system corrupted or vitiated vaccine matter.

It should be borne in mind that each and every variety of a sort, is the result of seed brought into what is termed the variation state—that is to say—being fertilized by the pollen of some other variety or sort, without which no variation can take place. It should also be remembered, when this is the case, that it is an innovation on the natural process of generation to continue a species, and if generally adopted, would run the whole vegetable kingdom into confusion. Each one of this variety is as independent and distinct as an offspring in the natural uninterrupted course of generation can be; generally, however, with the loss of the power to re-produce from its own seed its kind. Whenever this is the case, there is but one process by which such variety can be spread or continued beyong the life of the seedling, (and that is all a

matter of art,) that is by detaching parts and forming new roots thereto. Now, this is certainly no more or less than the same tree on different roots, with all its habits, health, and everything appertaining to it. With this natural view of the subject, there can be no conflict with the position that varieties may and "do run out," nor is it necessary to the point, to contravert the idea that the Seckel Pear and the Newtown Pippin may continue in perfection two thousand years hence. This no doubt will be the case, if their inherent constitutions, with the application of proper skill in the cultivation will admit of their existence to that time, or beyond it if you please. The dissimilarity between a bud and a seed does not consist then in the vegetating power, but in the results to be effected. And here let me remark that it behooves the advocates of perpetual duration to show that all varieties are in a perfect state of health or that a change is effected to produce this end, ere the doctrine can be generally received.

Yours, with much respect,

Spring Garden, near Cincinnati, Sept. 28, '46. } A. H. Ernst.

A *variety* is an individual so much varied from its *species* by peculiar circumstances, as to form a *sub-species*. By neglect, or improper cultivation it will return toward, or to its original form. There is no question, or ought to be none, on this point. The question of "running out" turns on this point—is there such a necessity of returning to its original type that *no* care or cultivation will prevent a variety losing its peculiar qualities? Knight thought that, although culture would defer the time, yet all varieties would, by an irresistible law, run out. Van Mons taught, that all varieties inclined to return to their original type, and could be checked only by the skill of cultivation. If we understand Mr. Ernst, he accords with Van Mons; and if so, we agree with Mr. Ernst; at least in respect to the main principle.—*Ed. Far. & Gard.*

EDUCATION OF FEMALES.

By education, I do not mean reading, grammar, and arithmetic or any mere intellectual accomplishment, but all these and whatever else relates to the proper training and development of our whole being, considered in a physical, moral and intellectual point of view. Thus it often happens that we find individuals quite accomplished in one respect that are very deficient in others,—very learned but poorly educated While I acknowledge the great importance of the acquisition of mere knowledge, I would by no means neglect those other attainments that are quite as necessary to every person who is well educated;—aquisitions which are equally as important to the happiness and usefulness of the individual. In my opinion and to no subject does this remark apply with more force than that of the education of families. I rejoice that the subject is now deeply engaging several of the most gifted minds of our country. Let every theory and every practice be rigidly scrutinised both in its tendencies and result; let all be subjected to a short examination by the light both of Science and Revelation, and I feel assured that much that is now fashionable, will be discarded as beneath the dignity and unworthy of the intelligence of rational minds. To aid in the promotion of correct views on this subject, I extract the following remarks from an address delivered by Dr. Hawes, of Hartford, before the American Institute of Instruction. The address is entitled "A looking glass for ladies. On the subject of fashion he says: "It is distressing to notice what tyranny fashion exercises over many of the fair-sex. Crowds of them are seen bowing at the shrine of this inexorable Goddess, and yielding obedience to her mandates, to the utter ruin of their health and happiness. In many of our cities and towns, aye, and smaller towns too, her reign is, indeed the reign of terror. She has but to speak, and no matter how absurd and ridiculous, or even torturing her utterances, she is at once listened to and obeyed. Not satisfied with dictating rules of dress, diet, air and exercise, she assumes the right to apply instruments of torture to the bodies of her victims, by which they are compressed and broken into a form utterly destructive of nature's beautiful model, and thus misshapen and deformed, heart, lungs, and other vital organs literally crushed within them, they are compelled to drag out an existence devoid of comfort and of usefulness."

On the subject of employment he says; "If mothers would see their daughters adorned with the character of the virtuous woman* they must learn to train them with a rigid reference to the laws of health, so as to secure the most perfect development both of body and mind. And our daughters must learn the essential conditions on which health depends, and carefully conform to them. They must learn, that if they would have a sound mind in a sound body, cheerful spirits with beautiful forms and blooming countenances, they must cease to worship at the shrine of the goddess of fashion and follow the precepts of reason and common sense, must breathe pure air, take free exercise, be satisfied with a simple, nutricious diet, and never be afraid to bear a part in the work of the kitchen, and the common affairs of the family. They must learn, in a word, in the whole course of their training both at home and in the school, to mingle labor with study, active with sedentary employments, and never fall into the absurd notion, that in order to be fine ladies, they must form themselves into inefficient, fainting, nervous things that often pass under that name."

In some future paper I may draw a portrait of some of our fashionably educated fine ladies; and also of some of those who are really the ornaments of their sex. Y.

* Proverbs, xxx. 10, 31.

ANNUAL SUCCESSION OF CROPS IN FRUIT TREES.

It is a general remark that fruit trees rarely bear two good crops in successive years. So far as my observation has extended the observation is true. The cause generally assigned, too, is doubtless correct; that is, that the tree so far exhausts its energies in producing one full crop as to be unable to produce another the next year. The question then occurs, can a tree be so managed as to pro-

duce fair crops each year. I suggest if the tree is permitted to bear only a certain moderate amount one year, which can readily be accomplished by knocking off the surplus fruit while it is young, that its energies may be husbanded so that it will bear the same amount the next year, should it not be injured by frost. One effect of trees exhausting their energies by producing an extra crop of fruit in one year, is to render them feeble at the commencement of the next year, and thus they are badly prepared to resist the influences of the cold and frosts of spring which destroy their weak progeny. Almost every person is aware from experience, that in a good state of health the cold has much less influence upon the animal system, than it has upon the same individual when in a state of impaired or feeble health. The general truth is that morbific agents exercise a much greater influence over those in feeble than over those in good health. The same law, in my opinion will, by careful observation, be found to extend to the vegetable kingdom. What, then, is the practical inference to be deduced from this law. Let fruit trees not be permitted in any one season to exhaust their energies by producing an over-crop. Let so much of the early fruit be removed as is necessary to prevent the trees from producing more than a light crop. Then will their energies not be exhausted so as to render the embryo fruit of the following year a victim to the chilling winds and late frosts of spring. I offer the suggestion with some hesitancy. I should think it, however, worth while to make an experiment on a few trees. Y.

WARM WEATHER OF 1846.

Friend Beecher: — A general impression prevails that the past summer has been one of unusual warmth. It is my intention, in a brief manner, to present the facts. By summer, both in common language and meteorology, is meant the three months, June, July, and August. The average heat of these three months gives, what is termed the mean temperature of summer. The mean heat of June this year, was less than it has been during a period of twelve years. The mean of June for twelve years is 71°,26, while the temperature this year was only 68°.16, being 3°.1 less than the average. The mean temperature of July was 75°.9, being nearly the same as the average, which is 75°.65. A portion of the month, however, was usually warmer; notwithstanding this, however, this month in the last twelve years has been at three periods warmer that it was the present year. The average temperature of August is 73°.2, while for the present year it is 76°.4, being 3°.2 above the average, and with only one exception, viz: in 1838, is the warmest August in the last twelve years.

The average temperature of the summer at this city, taking the mean of all the years since 1845 except 1842 and 1844, during a portion of which I was absent from the city, is 73°.42, while the mean temperature of the present summer is 73°.49 or less than one-tenth of a degree greater than the average.

The weather of the first fourteen days of September was, however, entirely anomolous in its character. The average heat of these days was 78°.1, being nearly 5° higher than the mean heat of August, and 13° above the mean heat of September. On nine of the fourteen days, at the warmest period, the thermometer in the shade stood at or above 90; on the remaining five days it was once 89°, twice 86°, once 85°, and once 83°. The lowest temperature was 66°, and the highest 92°. The mean temperature of the coldest day was 74°, or one degree higher than the average heat of August.

While then we would say that the mean heat of the three summer months has not been greater than usual, yet a part of July, the whole of August, and the first fourteen days of September, have indeed been unusually warm, and fully justify the popular remark that we have had a very warm summer. The change from summer to autumn was strikingly marked; on the 14th of September we had the warm heat of summer, and on the 15th the mild temperature of autumn. Since that the weather has been remarkably beautiful, except the 24th, when we had one and a fourth inches of rain. Joseph Ray.

Woodward College, Cincinnati, Sept. 29.

P. S. I leave it to those better skilled in such matters than myself, to speak of the influence of the warmth and the rain upon the fruit. The peaches were watery and deficient in sweetness and rotted more speedily than usual. The apples, too, in many instances, seem to be affected in a similar manner.

LARGE CORN-CROPS, WHEAT, &c. &c.

Pleasant Hill, Ripley County, Ia.,
Oct. 19th, 1846.

Dear Sir: — I once more take my pen in hand to put a few interrogations to you. But in the first place I will endeavor to inform you of the state of our crops generally. I should have done so long since, but I was waiting for some abler hand than myself to perform the task; but I find no person has done it yet, and so I must attempt it myself. In the first place we have organized an agricultural society in this county, which held its first annual fair on the 9th day of September last, when premiums were awarded on some of the staple products of the county, both in agriculture and the mechanic arts; and although we may say agriculture is in a state of infancy, as yet, in this county, yet some of the articles exhibited did great credit to the producers, both in quantity and quality. We had some fine specimens of fruit, mostly of the standard kinds. There is a kind of rot among the apples in this county this season, and they are also full of worms; but I think we shall have very few apples that will keep until Christmas. The worms in the apples I can account for, but the rot I cannot. But I have wandered a little from my subject. The premium awarded on wheat was for eighteen bushels per aker; and although this amount is not large, it is considered good, as this county has not been considered good for wheat, and that no extra pains had been taken with the wheat, for the society was organized some time last winter, after wheat-sowing. And now for corn—and I want you to summon all your credulity, for you may need it.

There were four persons contending for the premium on corn. The first yielded 115 bushels; the

second 123; the third 133, and the fourth 184 to the aker. (The first three numbers may vary a little from what I have stated, as I write from memory, but of the 184 bushels I am positive, as I was one of the examining committee.) This may seem a large yield, and it is, for this county; but it goes to show what may be done by proper cultivation. Now this 184 bushels was raised on land said to be run down, and was given over by its former proprietor. The present owner, some two or three years since, sowed this field (four akers) in red clover, in which it remained until last fall; when he broke it up very deep, turning the clover under and in the winter fed his stock upon it. In the spring he put what surplus manure he had about his stables upon it and plowed it again and in due time he crossed it out and planted, tending it as it should be done, and you see the result. Now it will be understood that this corn was not yet as dry as it should be to keep, but just dry enough to shell to measure it; but after allowing for all it can possibly shrink it will yield over 100 bushels per aker, and that, I think is not bad farming. This gentleman sowed half a bushel of Alabama wheat and aimed to sow it on half an aker of ground, and it yielded fifteen bushels of good wheat, but as the ground was not measured he could not contend for the prize. Our crops generally are above an average, and I think we are beginning to improve in agriculture. I will state that the potato crop will fall short in this county this season. There is no rot that I have heard of. The potato-fly injured the vines very much, which I believe was one cause of their not yielding well. My cabbages are well headed this season, but on examination I find a great many affected in the stock near the head; a slight pressure will break off the head, and some are affected in the centre of the head; can you divine the cause? My cabbages were so last season. E. Stark.

Monstrous Pippins (*Gloria Mundi.*)—Some of these apples, fruited in this county, have been brought to my office, and on weighing six, they were found to average 21½ ounces.

Another weighed	22¼	"
" "	23	"
" "	24½	"
" "	25	"
" "	26	"

I think it is rarely that this apple exceeds the last named weight. What have other counties done in this line? J. T. P.

ITEMS.

[The following belong to a former communication, but were omitted through mistake.]

Europeans dont eat meat: Page 3 vol. 2, and the reason stated is, they have not enough Indian Corn to feed them on, McGregor's Tables state the number of swine in Great Britain at 5,775,000 in 1828, and Macgueen in 1842 at 18,270,000, I dont know which is right, or whether either one are, but it is certain that the English people eat a vast quantity of Meat, and would consume more if they could get at it, and they could raise more than they do, if they could get to cultivate the land for themselves, to grow some barley and Horse Beans to feed their Pigs with, for they dont want Indian Corn for that purpose, and although the Scotch may eat Oat meal in Scotland, they dont eat it in England, but eat food like other people.

Catching Moles: Page 105 vol. 2. In England they destroy moles with traps made on purpose, some are made with wood, and some with cast iron, almost any one from the "Old Country" can give a discription of them, though like most other things, the catching of them is intrusted to the care of one man for a large district.

English Quarter of Wheat.—At page 48 vol. 2, is stated at 560 lbs, the quarter contains 8 Bushels, each bushel was 62 lbs, but by the imperial bushel it contains bare 47 ounces of water more than the old measure; how much wheat would occupy the same room, I have not been curious enough to ascertain; the quarter of a ton is 500 lbs.

Potato Crop.—At page 117 vol. 2, Potatoes are stated to be better for feed for horses &c. than corn; I know potatoes if boiled will feed pigs, but the meat is not so firm as that fed with corn or grain; if the flour of grain and boiled potatoes are mixed together, the pigs will do better; I know people who live chiefly on potatoes, but they dont look so well, nor are they able to work with those who eat meat with them; whether they are better than corn for feeding stock I know not, but they are generally considered very poor food for people to eat.

On Wool.—At page 191 and 219, vol. 2, contain some remarks on the selling of wool, and now let me observe; that the English Farmer never puts up his own wool for sale; after the fleece is taken off the sheep it is rolled up by the shearers in a careful manner and put away in a dry room. There are people there called Woolwinders; they are obliged to be excellent judges in the qualities of wool; they are sworn before a magistrate to execute their office fairly towards all parties, and if they do anything to the contrary, they can be severely punished; these persons attend upon the Farmers, undo every fleece, take out all dirty pieces, roll it up again in a certain way, and then it is ready for market; if the fleece is a damaged one, it is rolled up with the damaged part outside and is called a "Cot." And as for the farmer ever thinking of selling his wool *directly* to the manufacturer it would be impossible, because most probable every fleece he had would be of a different quality and would be required to be sold in various parts of the kingdom; besides it would be impossible for him to distinguish the different qualities so nicely as it is required. The Farmer sells his wool to some merchant, who sorts it, and very likely it is sold and sorted 2 or 3 times before it comes to the manufacturer, so that each one gets something for his trouble; it suits each one's purpose, and the manufacturer will give more for wool ready sorted to his hands, than when he has to take wool not the sort he wants, and to pay for sorting it himself, and has to sell the refuse to some one else.

T. Bissel.

Richness of Milk.—The Boston Cultivator says, that Alderney cows usually give milk so rich that seven quarts will often yield a pound of butter; and that of other cows it requires nineteen or twenty quarts. The milk from the famous cow, Blossom, required nineteen quarts for a pound of butter.

SELECTIONS.

SOME REMARKS OL THE DURATION OF RACES OF PLANTS.

BY A. H. ERNST, CINCINNATI, OHIO.

Do races of plants wear out?

This is a subject attracting just now much attention and discussion among horticulturists, and which it is to be regretted, is not always conducted in a becoming spirit. A subject on which some of the most intelligent *seem* to differ *widely*, should secure at least, common courtesy; ostentation and haughty bearing are but feeble arguments, and will not weigh much with the well informed, however high and scientific the source from whence they emanate.

To my mind, there is rather a misapplication of terms, than a difference on matter of fact. On the one hand, it is held, with no small amount of plausibility, that, "varieties of fruit do run out," on the other hand, it is insisted that it is contrary the "laws of vegetable life for races of plants to run out," and can, therefore, not be true. I will not presume to enter the lists with that talented and learned horticulturist, Lindley, or to enter on the defence of the opinions of the late Mr. Knight, to whose observing and practical knowledge and experience, the world is largely indebted for the present elevated condition of pomology, though I would not pass them by without due "respect." But does the subject not assume a different aspect by the application of science and art, in changing the original condition and character of the offspring of a race or variety? May we not, with as much propriety, expect the Bartlett pear to reproduce its sort from seed, as to argue that there can be no such thing as a sort becoming worthless or run out, from the admitted fact, that in an original condition vegetation proceeds on without degenerating? Why not? it is an offspring of the original pear, which does continue to reproduce from its kind, as it always has been unmolested by foreign agents. Is the answer not plain? it no longer possesses the entire properties of the original parent. It has undergone a radical change.

The botanist finds no difficulty in classing or understanding the order, to which plants belong, in the natural or original condition, but when he comes in contact with the perversion the ingenuity of man has given the subject, his beautiful system of application ceases to apply, and he calls it a "monster," of which he finds man has produced an endless variety, of as many hues and characters which can only be propagated or continued in existenae by an unnatural process; or in other words, by a process not known to the original law of propagation. We cannot go back to the original parent to renew a vitiated health, by the natural process of generation from seed, hence the analogy does not hold good. To prove this, it is only necessary to attempt the continuation or reproduction of the Bartlett, or any other individual sort of our fine pear, by what is termed the natural process, that is, from the seed. If this cannot be done, are we then not called on to consider a new creation, subject to none of the laws for its continuation in existence, beyond the individual that controls the original parent? If, then, this position is sound, does it not clearly follow that a variety of fruit may, from constitutional defect, or other cause, become partially or generally diseased, and run out, without infringing or doing violence to the laws which govern the natural order of vegetation? Let me be fully understood: although it is unhesitatingly admitted that originally there can be no such thing as a race of plants wearing, or running out, it by no means follows that all the descendants of a race, however operated on by artificial means, remain in perfect health, but, on the contrary, it is more than probable that every innovation on the original law of generation, is but a step to undermine and impair the constitution of the product.

If, then, after having produced, by the application of science and art, a variety of fruit deemed worthy of propagation, and having lost by the application of science and art, the power of propagation or continuing this variety or sort by the natural process, and being able to do so only by engrafting or budding on other trees, or by layering it, what do we more than continue that identical tree in existence, no difference to what part of the world, or how extensively it is spread? And do we not as much spread with it any constitutional disease which it may have inherited, as the color of the fruit it bears? And although, like a family of children who have inherited the consumption, under various treatment and in different climes, a portion may survive for a brief period the rest, the whole and entire variety in all parts of the world, must become subject to the effects of the same inherent cause. I think, then, the plain and irresistible conclusion to which every practical enquirer must come, is, that varieties of fruit may, and do, wear or run out.

The health and vigor of the stock on which the variety is grafted, undoubtedly has a partial effect as the soil in which it grows to retard or promote to its final termination the constitutional tendency of the variety, but can no more prevent the result than to change the color of the fruit. In fact, the stock has but little to do with what is put on it, more than to act as a medium of communication between the earth and the extremities above. This is proven from the fact that the peculiarities of growth with other characteristics of varieties, remain unchanged in their habits, on these new roots. The vigor of the feeble-growing sort, is not materially affected to promote its growth, if any, by being grafted on a vigorous stock. If it were otherwise we should have nothing to depend on as land-marks to guide to satisfactory conclusions, except the fruit, as to what the variety is. It is, therefore, fallacious to look to this source for the permanent continuance of a variety in health or existence; but each sort must wholly depend for duration on its own constitution, and this will differ very widely in different sorts.

That many valuable fruits once perfectly and generally healthy, and free from blemish, are no more so, will hardly be disputed, among which may be named, in our own country, the *White Doyenne Pear*, once the pride and boast of that delicious family of fruit, and the *Pennock Apple*, once an universal favorite. This has become so generally affected in the west, with spots or flakes of dry decay throughout the flesh, that it is rare to meet with a perfect specimen. This disease is not identical with the bitter-rot, but very distinct,

having none of the bitter taste predominent in that disease. Many other parallel cases might be named, but they are not deemed important to establish the fact that varieties may, and do, wear or run out.

Is there, then, not a want of candor, after *science* has produced an illegitimate offspring with a *defective* constitution, to throw itself back on the *law* governing the original race, and argue, from that law, that there can be no such thing as a sort running out?

The above reflections were induced by the reading of an article from the London *Gardeners' Chronicle* and republished in the *New England Farmer*, by Prof. Lindley, in which the writer in fact *admits* the position contended for, but most strenuously endeavors to avoid the conclusion, and treats those who differ with him, with a degree of asperity unbecoming one occupying, in the scientific world, the exalted position he does. They are not offered as advancing new or original views on matter of fact, but to place them in an unvarnished garb before your readers.—*Hort. Mag.*

SPRING GARDEN, near Cincinnati,
Feb. 26th, 1846.

ARMY WORM.

Mr. T. A. Affleck, the editor of the Agricultural department of the N. O. Commercial Times, gives a sad account of the *prospective* ravages of the army-worm in Mississippi.

We give the entomological portion of the article, for the sake of its natural history; more particularly, however, because information on this subject has been asked.—*Ed. Far. & Gard.*

INGLESIDE, ADAMS COUNTY, Miss.,
August 29, 1846.

Finding much difference of opinion as to the nature and character of the worm now ravaging our cotton fields, the extent of the injury already done, the probabilities of their further increase, and of the crop being ultimately lessened by them; and finding, further, that an opinion expressed by me as to the effect of the worm's ravage, has been misunderstood, I shall in this instance speak in the first person, leaving you to add editorially what further information you may possess from other quarters.

It is now some four weeks since the appearance of the caterpilar was spoken of. It was, at that time, supposed to be a mistake—that some other worm had been taken for the true cotton devourer. I made every inquiry in my power relative to the worms spoken of, and took an early opportunity of seeing them. They are the same as those we had in such myriads in 1844, and such I pronounced them, holding out no hopes of escaping injury this year, but advising all to console themselves with the hope that the stripping of the leaf might aid the cotton in opening this backward, wet season.

At this time, the worm is in every cotton field in this region of country, and, I have no doubt, in every county in the State. The present crop of them is not sufficiently numerous to do material harm, there being not more perhaps than from half a dozen to a dozen on a plant. These have mostly attained the chrysalis and moth state. The latter is to be found, in the greatest numbers, not only in the cotton fields, but in the woods and swamps, and hills—miles from a stalk of cotton. They travel rapidly, and to a great distance. I have no hope, whatever, that the plant will escape total destruction from the myriads of worms that must of necessity appear in a week or two, from the eggs laid by these moths!

To prove that I am not needlessly alarmed, let us look at their natural history—it must be a mere sketch—I have not leisure, nor am I yet fully prepared to give a full and scientific account of them.

The parent insect is a night flying or owlet moth. I think belonging to the *Mamestradæ*—of a beautiful greenish gray, with bronze shading: on each outer wing there are two small white spots, shaded with bronze, near the shoulder and in a line with the edge; and lower down, a large kidney-shaped black or brown spot, shaded with white. Several wavy lines of purple, crop the outer wing, which has also a fringe of the same color on the inner edge, and a fringe, grey and purple, at the end. The body is thick and tapers to the end. The female is larger than the male, but they are otherwise much alike. The female deposits her eggs on the leaf, (I am not fully satisfied that they are placed *only* there,) in clusters; they are round, and whitish or pale green, and quite small. They are hatched in from two to five days, according to the weather, and immediately commence eating the leaves of the plant. They increase rapidly in size, attaining their full growth of one and a half inches in from three to five weeks. They are of a light green color, with longitudinal stripes of yellow on the sides, and along the back two black stripes, separated by a very narrow line of white. Some are without the black stripes. They are also studded with small, distinct black spots, from nearly every one of which a black hair grows. They have sixteen legs—one pair behind, eight in the center of the body, and six pro-legs. They elevate the front half of the body, when at rest, giving it a continued motion from side to side. They give forth, when in numbers in the field, a peculiar sweetish odor, readily recognizable by the observant planter. During the life-time of the worm, it casts its skin at least four times. When it has attained its full growth, it places itself near one of the corners of the leaf, spins a few threads of silk, attaching them to the leaf in such a way as to draw up the edge, which it makes fast to the surface of the leaf, forming a scroll, within which it undergoes its transformation to a *pupa*. This it does in thirty-six to forty-eight hours. The pupa is black and slimy. In this state it remains from one to three weeks. I have found the state of the weather influence the change thus far, generally from seven to ten days—when the perfect insect appears, and proceeds to multiply her species. This each female will do to the extent of from two to six hundred or more.

It is thus seen that we cannot entertain a hope. Those moths which have been flying, in such numbers, around the lights in every house, for the last week, have already deposited their eggs, or are now engaged in doing so. They will quickly hatch out, and absolutely over-run us. I have

accounts of them in almost every cotton growing State. The crop is at least three weeks later than usual. I think that the incessant rains have had, and still have, put it back yet another week. The first crop of bolls is rotting very much—what little cotton has gone to market, you will observe, has been pronounced very middling in quality, and even that opens slowly. The after-crops the worms will either destroy, or greatly injure, by eating off the calya leaf or *square*. In ordinary seasons we have a bale to the hand housed by this date—this year, scarcely a pound. The boll or bore-worm, too, a new enemy in the hills, within the last two years, will destroy *ten per cent.* of the young bolls, after they have attained a size at which they are usually considered safe. Of him I shall speak at another time—as also of the checks and preventatives to be used for both.

BUFFALO BERRY.

This beautiful low tree is now much recommended for hedges, and for ornamental clumps upon lawns. Those who possess it may be interested to learn something of its appearance and habits, in its own favorite haunts. We extract the account appended from Catlin's Indian Customs; the scene of it was some 2000 miles above St. Louis, on the Yellow Stone, a tributary of the Missouri. *Far. & Gard.*

In addition to these, we had the luxury of service berries, without stint; and the buffalo bushes, which are peculiar to these northern regions, lined the banks of the river and defiles in the bluffs, sometimes for miles together; forming almost impassable hedges, so loaded with the weight of their fruit, that their boughs were every where gracefully bending down, and resting on the ground.

This last shrub, (*sheppardia,*) which may be said to be the most beautiful ornament that decks out the wild prairies, forms a striking contrast to the rest of the foliage, from the blue appearance of its leaves, by which it can be distinguished for miles in distance. The fruit which it produces in such incredible profusion, hanging in clusters to every limb and to every twig, is about the size of ordinary currants, and not unlike them in color and even in flavor; being exceedingly acid, and almost unpalatable, until they are bitten by the frost of autumn, when they are sweetened, and their flavor delicious; having, to the taste, much the character of grapes, and I am inclined to think, would produce excellent wine.

The shrub which bears them resembles some varieties of the thorn, though (as I have said,) differs entirely in the color of its leaves. It generally grows to the height of six or seven feet, and often to ten or twelve; and in groves or hedges, in some places, for miles in extent.

While gathering the fruit, and contemplating it as capable of producing good wine, I asked my men this question: "Suppose we three had ascended the river to this point in the spring of the year, and in a timbered bottom had pitched our little encampment; and one of you two had been a boat builder, and the other a cooper—the one to have got out your staves and constructed the wine casks, and the other to have built a mackinaw boat, capable of carrying fifty or a hundred casks; and I had been a good hunter, capable of supplying the little encampment with meat; and we should have started off about this time, to float down the current, stopping our boat wherever we saw the finest groves of the buffalo bush, collecting the berries and expressing the juice, and putting it into our casks for fermentation while on the water for two thousand miles; how many bushels of these berries could you two gather in a day, provided I watched the boat and cooked your meals? and how many barrels of good wine do you think we could offer for sale in St. Louis when we should arrive there?"

This idea startled my two men exceedingly, and Ba'tiste gabbled so fast in French, that I could not translate; and I am almost willing to believe, that but for the want of the requisite tools for the enterprize, I should have lost the company of Bogard and Ba'tiste; or that I should have been under the necessity of submitting to one of the unpleasant alternatives which are often regulated by the *majority*, in this strange and singular wilderness.

I at length got their opinions on the subject; when they mutually agreed that they could gather thirty bushels of this fruit per day; and I gave it then, and I offer it now, as my own also, that their estimate was not out of the way, and judged so from the experiments which we made in the following manner: We several times took a large mackinaw blanket which I had in the canoe, and spreading it upon the ground under the bushes, where they were most abundantly loaded with fruit; and by striking the stalk of the tree with a club, we received the whole contents of its branches in an instant on the blanket, which was taken up by the corners, and not unfrequently would procure us, from one blow, the eighth part of a bushel of this fruit; when the boughs, relieved of their burden, instantly flew up to their native position.

DIFFERENT QUALITIES OF MILK AT DIFFERENT STAGES OF MILKING.

It is well known to many that milk varies in its character according to the stage of the milking in which it is taken from the cow. That which is taken first is much thinner and has less cream than that which is taken last. It is supposed, too, by some, that any impurities of milk, arising from anything that the cow has eaten, such as turnips or onions, is contained principally in the first portion drawn by the milker. We find in an old number of the Massachusetts Agricultural Repository, some experiments detailed by an individual, in regard to these things, which some of our readers may be curious to know. They were extracted from Anderson's Recreations in Agriculture.

Several large teacups exactly of the same size were taken, one of them was filled at the beginning at the milking of the cow, and the others at regular intervals, till the last, which was filled with the dregs of the strippings. A counter weight being put in for each cup, they were individually weighed, so as to ascertain with precision that the same quantity of milk was contained in each cup. From a great number of experiments,

frequently repeated, with many different cows, the results were in all cases as follows:

The quantity of cream obtained from the first drawn cup, was in every case much smaller than from that which was last drawn; and those between afforded less or more, as they were nearer the beginning or the end. The quantity of cream obtained from the last-drawn cup, from some cows, exceeded that from the first in the proportion of sixteen to one. In other cows and under particular circumstances, the disproportion was not quite so great; but in no case did I find it fall short of the ratio of *eight* to *one*. Probably, upon the average of a great many cows, it might be found to run at the ratio of *ten* or *twelve* to *one*.

This was not all. It was found that there was not only a great difference in the *quantity* of cream, between the first strippings and the last, but there was also an essential difference in the *quality*. The experimenter goes on to state that the cream in the first drawn cup, especially when the difference in the quantity was very great, was only a thin, tough film, and very white. That in the last-drawn cup was of a butryaceous consistence, and of a glowing richness of color, that no other kind of cream is ever found to possess. Nor was this all. The difference in the quality of the milk, after the cream was removed, that remained, was perhaps still greater. That in the first-drawn cup was a thin, bluish liquid, appearing as if a very large portion of water had been blendid with ordinary milk. That in the last cup was of a thick consistence, yellow color and rich taste, more resembling cream than milk in all respects, only sweeter to the taste, and less oily upon the palate.

Now the practical inference to be drawn from these experiments, is this. *Always milk clean.* It is very evident, as the writer afterwards observes, that he who leaves behind only a half pint of milk that might have been obtained, loses, in fact, as much cream as would have been yielded by about six or eight pints of milk at the beginning, and loses, besides, that portion of cream which alone can give richness and high flavor to his butter.

There was another experiment which interested us somewhat. It is well known to those who have had much to do with milk, that farrow cows give milk that is perceptibly salt. The milk of a farrow cow whose milk was quite salt, was drawn into different cups, one after another. On examination, in the order which they were drawn, it was found that the first cup was the saltest of any, and that this taste gradually abated in each succeeding cup, till about the middle, when it totally disappeared. From this it is inferred, although we believe no experiment has been tried to prove it, that the nauseous taste arising from certain substances eaten, as cabbages, turneps, garlic, onions, &c., may affect the milk in the same manner.—*Maine Farmer.*

CATTLE TRADE.

The curious fact in *swinecology* is affirmed by a Kentucky drover, that his hogs which weighed one hundred and fifty at starting, reached an average of one hundred and eighty on arriving at New York—being nearly half a pound a day while on the journey. On the other hand, the loss of weight—or "drift," as it is called—of cattle—is equal to one hundred and fifty pounds, which a bullock of one thousand pounds weight at leaving home lessons on his way to the Atlantic butcher. This drift or loss, it is observed, is chiefly first in the kidney-fat and fat of entrails. It has been ascertained that a hog will set out on his journey to that bourne whence no *such* traveller returns, so fat as to have no cavity or vacuum in his corporation. If, as he journeys on, you don't feed him, he lives first upon and consumes his gut-fat, then his kidney-fat, and lastly, his carcass wastes away.

In driving cattle, the practice is to stop (but not to feed) for an hour at mid-day, when the cattle in less than five minutes all lie down to rest.

A drove of one hundred and twenty cattle, as easily driven as a smaller number, is usually attended by a "manager" on horseback and two footmen. One footman goes ahead, leading an ox the whole way, say eight hundred miles. The manager on horse-back takes his station behind the first forty head, and the third man on foot brings up the rear. There are stations along the whole route—country taverns, often kept by the owner of the adjoining farm, who thus finds a market for his own produce, and keeps at any rate a constant supply of what is needed for the drover. Wending their way through Ohio, the farmer supplies them with that glorious plant, the pride of our country, Indian Corn, as they have feasted on it at home, stalk, blade, and grain, altogether; but, when on their melancholy journey they touch the line of Pennsylvania; Mynheer brings forth his fragrant hay and corn already shucked, and finally, when they come late enough to market, they are turned at night into grass lots, prepared and kept for the purpose.

The cattle reared in the corn regions of the West, especially in Ohio and Kentucky, have been heavily dashed with the short-horn blood, by which their average weight has been increased, it is said, about two hundred pounds, with great improvement in their fattening properties and the quality of their meat.

A Kentucky farmer would now be very loth to let a bull of the much vaunted old Bakewell breed, with his straight back and long horns and fat all to itself overlayinf the carcass, come within a ten foot pole of his herd of cows. Cattle with a strong infusion of the improved short horn blood, are still esteemed to be preferable to the full-blood, as being more thrifty and active.

For obvious reasons, cattle are not so much transported on rail-roads in this country as in England, where the distances from the feeding place to the market ase so much shorter. Cattle will go very well on a rail-road for twelve hours together, but they must lie down, which they cannot do in the cars like a hog, that lets himself down and sleeps on the space upon which he stands. The charge, too, on the rail-road in our country is too high. For lame bullocks that are sometimes sent from Harrisburg to the Philadelphia market, they charge half as much as it costs to drive them all the way—750 or 800 miles, from Kentucky to New York—the one being $8,00, the other estimated at about $16.

The last of the western cattle arrived in New York about the first of August, when they are driven out of the market by the grass-fed herds of

more neighboring regions. The cost of road expenses of a drove of one hundred head from Kentucky is about $1,500. Some of the latter droves come in on grass at a less expense; but, as before intimated, the decline or "drift" is greater than when fed on hay and corn, and the beef not so good.—*Farmer's Library.*

FOOT ROT IN SHEEP.

Some interesting facts relative to this formidable and contagious disease have been communicated to us by Humphrey Howland, Esq., of Cayuga county, whose long and extensive experience in the management of sheep entitles his opinions to great weight. He has applied a remedy which, if not totally eradicating the disease, certainly promises to reduce it exceedingly. This remedy is now in use for the second season during which time the rot has diminished from thirty per cent. to one per cent., in a very extensive flock, or only one sheep is now lame where thirty were formerly. Other flocks in the neighborhood, to which the remedy has not been applied, are as badly affected as ever.

The remedy consists in mixing flour sulphur with the salt given to the sheep, in a proportion just sufficient to discolor slightly the salt, or about one-twentieth part. They are regularly and constantly fed with this mixture the season through.

The disease being considered as allied to the itch, the sulphur mixed with oil was also applied to the backs of the sheep immediately after shearing, and whatever effect this mixture may have had upon the rot, the grease was found to have increased the weight of the wool about a quarter to half a pound per head. The practice of applying oily substances externally to sheep, and the beneficial results, have been elsewhere known, and this experiment further establishes the advantages.

The cost of these materials for large flocks may be reduced by purchasing in quantity in N. York city. Flour sulphur is often retailed at twelve and a half cents per pound; in New York it costs three dollars per hundred, and fifty cents additional, as freight, brings it to only three and a half cents per pound Lard and lamp oil are costly as external applications; but train oil, or oil of the true whale, is only about 32 cents per gallon in N. York, if bought by the barrel, or $10 per barrel; this would be enough for 2000 head of sheep, or half a cent per head; the sulphur mixed and the labor of application would be about two cents per head.

It is of great importance not to draw hasty conclusions; but the above remedy, it is believed, if not totally removing the rot, which longer trial may accomplish, will certainly be of the highest benefit in lessening its formidable nature.—*Albany Cultivator.*

GRAPE VINES.

An experienced horticulturist sends us the following:—Grape vines in the open air, such as the Isabela and Catawba, which have much fruit on, ought to have the smallest bunches cut away and the smallest berries taken out of the remaining bunches with a pair of sharp pointed scissors, or with the fingers and thumb. There is scarcely a grape vine in this city but what has been seriously injured by over-cropping, and in many cases past recovery. Most people imagine when the vine does not shoot as strong as usual in the spring, that the cold whether, want of manure, the moon, &c., is the cause of it; but in the majority of cases the overcropping does the mischies. When this is the case the fruit does not get ripe—the greater part does not acquire its proper color and flavor,—the plant being overworked becomes infected, crippled, and in a manner strangled. The main branches seldom swell out any larger after this, not so much from the quantity of fruit which may be on them, as the seeds which the fruit contains. The effort which the plant is required to make in the formation and perfection of the seeds completely exhausts it. In short, the process of production which takes away the vitality of the parent plant, and gives vitality to the seeds, (which are the young plants in the embryo state) deprives it of its constitutional vigor or stamina. This is, also, to some extent, the ruin of the peach tree; it is not the fruit, but the stone and seed which the fruit contains which exhausts the tree. Any persons may satisfy themselves on this point, by observing the peach when the fruit is of the size of a hickory nut; one third or more fall off, which will be found to be soft all through, so that they may be easily cut in half with a knife. Nature not being able to perform the operation of stoning and seeding for the whole, casts off the excess; still what remains is generally too much, unless the tree be very young. But what has this to do with vines? you would enqui-e: — It shows that the peach tree and most fruits naturally cast off the greater part of the excess, but the grape vines have not the capacity to do it; therefore, it is necessary to assist them in so doing, by thinning out as above stated.—*Exchange paper.*

FOREIGN ITEMS.

The Senate of the free city, Frankfort, has just published a proclamation allowing the importation of corn, duty free, into the territory of the republic.

The mills in the Royal William Vitualling Yard, at Plymouth, are immediately to commence grinding, night and day, Indian corn, for the supply of the distressed Irish. It is expected they will perform about eighty quarters, or about 38,403 lbs. of meal per day.

Imports of American Flour and Indian Corn. There were imported into Liverpool this year from America, 877,659 barrels of flour, and from Canada, 246,276, in all 1,123,935 barrels. The increase of Indian corn is remarkable. In 1845, the import was 37,000 quarters—in 1846 192,000 qrs. The stock at present in liverpool, is 340,000 barrels of flour, free and in bond, and about 200,000 quarters of wheat, free and in bond. The other grain may be estimated at 100,000 quarters. Thus we see what a trade the corn trade in Liverpool is likely to be.

The Commerce of Europe. — The *Austrian Lloyds*, in an article founded upon official documents, gives the following summary of the foreign commerce of Europe. The European mercantile marine, without including the coasting trade, comprehends 260,000 vessels, measuring in

all 33,493,000 tons. The total value of the merchandize they carry is estimated at 11,935,765,000 francs. The proportions per cent. which each of the different states of Europe bears in this total value are as follows: — England 51,13-46, France 13 3-5, Holland 5 7-9, Hamburg 4 4-5, Russia 3 8-9, Sardinia 3 1-6, Belgium 2 1-5, Prussia 2 1-9, Austria 1 4-5, the Two Sicilies 1 1-2, Sweden and Norway 1 1-5, Tuscany 1 1-9, Denmark 1 1-45, Bremen 1, Portunal 8-9, Spain 14-15, and all the other states six per cent. The result is that the trade of France and Belgium, taken all together, is equal in value to that of Germany and Holland united — that is to say, that each represents 15 4-5 of the total. The four taken together represents about 3-5 of the trade of England.

At the General Scientific Congress lately held at Marseilles, the subject of the cultivation of rice in the salt marshes on the banks of the Rhone was discussed, and it was proved that rice would thrive as well in that locality as it does in Italy. Samples were produced which had been grown at Mandirac, near Narbonne, where a trial on a large scale had been made, and which, notwithstanding the difficulties attendant on a new undertaking, would, it was thought, yield a profit of fifty per cent. to the proprietors.

The potato crops in England and Ireland, tho' very short, it is thought will not prove *quite* an entire failure.

The sufferings of the poor in Ireland, and the excitement consequent on these, is represented as very great. The Government were making efforts to alleviate the sufferings of the poor, but fearful riots have occurred, and serious collisions have ensued between the military and the starving peasantry. In Dungarvon there was a mob of ten or twelve thousand, who attacked the merchants' stores, and were driven off only by the Dragoons firing on them.

Carriage Brake. — A patent has been recently granted for an invention of that peculiar class which, when they appear, excite wonder that they had not been thought of before. It consists of a simple arrangement by which the rear end of the pole of a wagon, or a stage coach, by being permitted to slide back two or three inches through a groove, by this motion, operates on a pair of short levers, which force a pair of brake blocks against the rear side of the forward wheels; thus impeding the wheels by the action of the horses in holding back the pole. This excellent arrangement was invented by Mr. John Dubois, Jr., of Cascade, Pa. No country stage coach should be permitted to run over hard hills without this safe and simple appendage.—*Maine Far.*

Soap and Manure. — T. Dalton, a silk dyer, says, in the London Agricultural Gazette, that he uses 15 cwt. of soap weekly, to discharge the oily matter from the silk, and forming of itself a kind of soap,—the whole of which yields from 4000 to 6000 gallons of strong soap-suds per week. This he has lately applied to his farm, and "its effect is most extraordinary." It has been used only one season, and its results cannot be accurately given, but he considers it more powerful than any other manure; and he thinks, if farmers were allowed the drawback of the duty on soap used as manure, as manufacturers are, it would soon supercede guano. [*Ex.*

Economy in Cooking Cranberries. — Owing to the scarcity of apples, pears, peaches, &c., prevailing throughout the State, as well as to the great abundance and excellent properties of cranberries, the latter are much used for sauce. In preparing them for the table, hundreds of dollars may, no doubt, annually be saved by the people of Michigan, by observing the following directions, and that, too, without causing the sauce to be any the less palatable.

To each quart of berries, very shortly after the cooking of them is commenced, add a tea-spoonful of saleratus. This will so much neutralize acidiferous juice, which they contain, as to make it necessary to use only *one fourth part* as much sugar as would have been requisite had they been cooked without using saleratus.—*Mich. Far-*

To make quince marmalade.—Select your quinces when they are fully ripe, pare and quarter, and take out the cores, then put them in a sauce-pan; cover them with the parings and spring water; put on a close lid, and let them stew over a slow fire until they are of a pink color, then take out your quinces, beat them to a pulp, and strain off the liquor. Take a pound of loaf sugar to every pint, boil and skim it well, then put in the quinces and boil them gently nearly an hour, stirring constantly. When cold, put it in glasses, and tie down tight.

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